DCCUMENT RESUME

ED 037 990 EF 004 223

TITLE Soundstop. An Experimental Student Housing Study.
INSTITUTION Ontario Dept. of Education, Toronto. School Planning and Building Research Section.
PUB DATE 69
NOTE 40p.

EDRS PRICE EDRS Price MF-$0.25 HC-$2.10
DESCRIPTORS *Aurally Handicapped, *Blind Children, Building Design, Deaf Children, Design, Design Needs, *Dormitories, Furniture Arrangement, Handicapped Children, *Handicapped Students, Housing, Interior Design, *Interior Space, Physical Environment, Traffic Patterns

ABSTRACT

The design develcpment of a housing facility for deaf and blind students is reviewed in considerable detail. Initially traditional architectural solutions to the creation of dormitory space and accompanying circulation patterns are examined for their effect upon the lives of the inhabitants. The subsequent design progression which is presented is based largely upon desired alterations in the social and academic life styles of the residents. Each space in the final design is dealt with as to its development, layout, and functional goals. Interior furnishings for various spaces are shown in several different schemes to meet the wide range of needs for the 6- to 20-year age bracket that will be served by the facility. Photographs and drawings are used extensively as visual aids to explain the design process. (RS)

EF 004223

ED037990

SOUNDSTOP

QUIETACTIVITIES

DEEPTHINK

SHIP

VOLUNTEER

LIFE

SOUNDSTOP

DISCUSSION

POOLCOFFEE

An Experimental Student Housing Study

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Prepared by
School Planning and Building Research Section
of the Architectural Services and
School Business Administration Branch
Ontario Department of Education
Toronto 1969

ED037990

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED
EXACTLY AS RECEIVED FROM THE PERSON OR
ORGANIZATION ORIGINATING IT. POINTS OF
VIEW OR OPINIONS STATED DO NOT NECES-
SARILY REPRESENT OFFICIAL OFFICE OF EDU-
CATION POSITION OR POLICY

Contents

1.0 Introduction
2.0 Evolution of House Unit
3.0 Detail Study of House Unit
4.0 Detail Drawings of House Unit & Typical Room Layouts
5.0 Furniture Components
6.0 Linear Development of Housing Units
7.0 Angular Development of Housing Units

1.0 Introduction

This study has been prepared in conjunction with the Schools for the Blind and the Deaf Branch because it is planned that residential projects will soon be underway at the existing School for the Deaf at Belleville, the School for the Blind at Brantford and at the New Regional Centre for Hearing Handicapped Children proposed for London, Ontario.

Since the incidence of blindness and deafness among children is low, and an educational program for a range of ages from 5 years to 21 years is required, it is impractical to provide local well graded classes except in the largest urban centres. Residential schools are at present the best way to centralize the essential educational facilities.

The scope of the study is limited to the social and environmental aspects of residential accommodation for children between the ages of 6 and 20. It is this extended stay within the same complex during the formative years which makes the problem difficult.

Although the report is mainly concerned with hearing impaired children, it is hoped that it will be of general interest to those concerned with housing students in other situations.

It is important that housing for children provide more than the basic essentials of food and shelter. The environment created must encourage pride in and respect for the surroundings, both on the group and individual levels. It must allow for a wide range of social interaction and provide opportunities for both communal and personal activities.

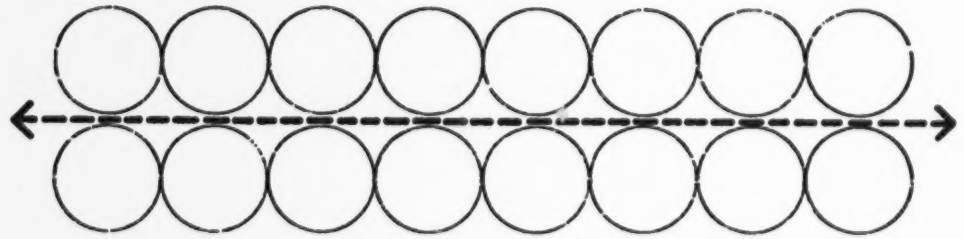
No definite conclusion is yet possible about the optimum social groupings for this type of accommodation. For example, should children of different ages live together? Should there be a mixture of handicapped and non-handicapped? How much contact should there be between the sexes and how does this vary with age?

Thus the main aim has been to provide a framework in which a range of these alternatives can be tried, in order to find the best way to create an environment for the children which will give a secure, stable background against which they can develop fully as individuals.

The housing tradition that has become synonomous with this type of institution has been that of the long central corridor, accommodating groups of 65 and over, gang washrooms and poorly organized social spaces. In the past, two main forms have been used. The most common type being the corridor system. More recently, the idea of small individual cottage units has been experimented with.

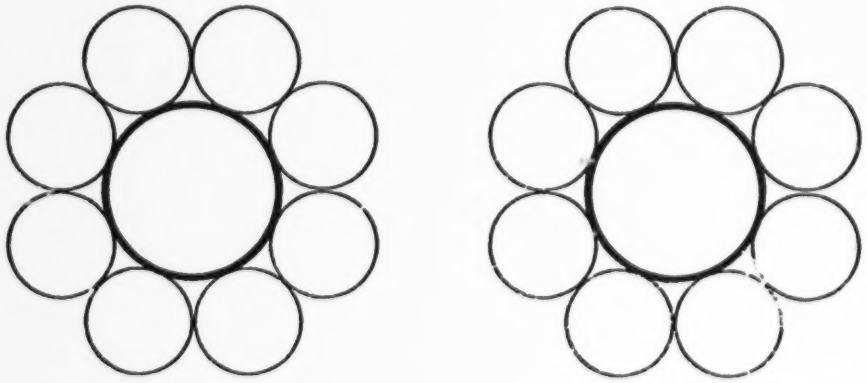
Corridor Type

Although the corridor provides a good movement system for linking the rooms to the main circulation of the school, it does not encourage social interaction between the separate rooms. Because of its impersonal quality, it acts as a barrier and does not become a space for lingering or discussion but rather one to be hurried through to a more positive destination.



Cottage Type

This form, housing a small number of children under one roof in the care of residence counsellors, provides a very good cohesive social unit and allows a variety of experiments with different social groupings of age, sex and handicap. There is however an obvious danger of the separate units becoming isolated from each other and because of the very nature of the unit, being a small intimate group, a conflict can arise with the child's real home.



Linked House Type

As a result of studying these two existing types, a form has evolved which has the advantages of separate cottage units linked together to increase social interaction between them. The aim has been to provide a number of levels of contact ranging from the small personal space to the large social area, both inside and outside the building.

It was decided that the optimum group size for each house unit would be between 16 and 32 children depending on age. This number is large enough to economically justify the provision of a variety of social facilities and is yet small enough to form an identifiable unit under the care of only two residence counsellors.

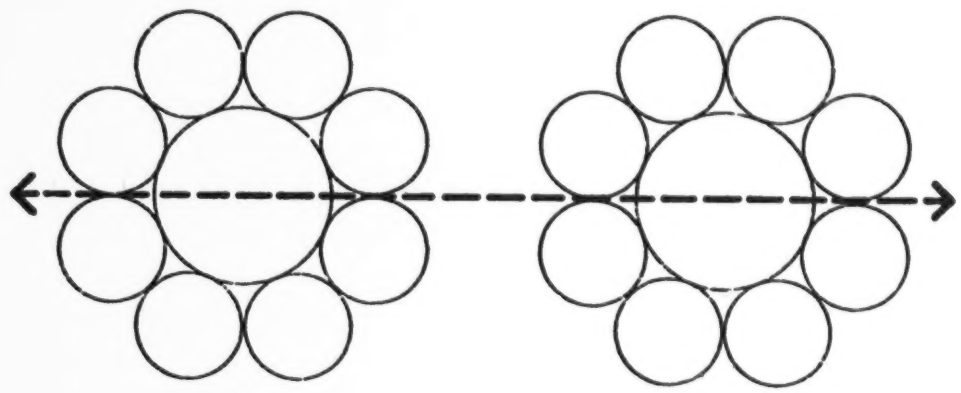
On this basis the house unit can be divided into three main parts; bedroom area, social areas and the counsellor's area. It was decided to break the bedroom space into four open areas, each with its own service core. Each of these could accommodate a maximum of eight younger children or could be divided by the use of furniture/partitions into a variety of smaller spaces to allow for experiments with different combinations of age, sex, handicap and personal preferences.

The social areas fall into two main categories, the general space for use by the whole house and friends, and the smaller private areas for use by intimate groups or individuals.

The counsellor's unit should be in such a position that he can have ready access to the children under his care and at the same time be able to create his own personal environment.

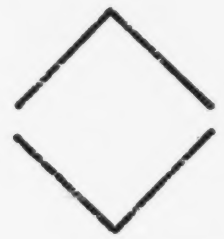
Thus from these factors, a division arises between those areas that need privacy and quiet and the more noisy public spaces. It was felt that this should be clearly expressed in the form of the building so that each space could operate simultaneously without conflict.

Finally, the decision was made to build on two floors to create a reasonably high density of activity and at the same time to create a domestic scale.

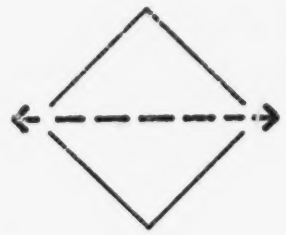


2:0 Evolution of House Unit

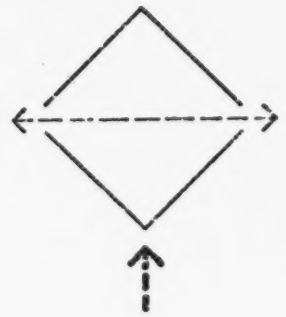
It was decided that the main social area should be the heart of the house unit.



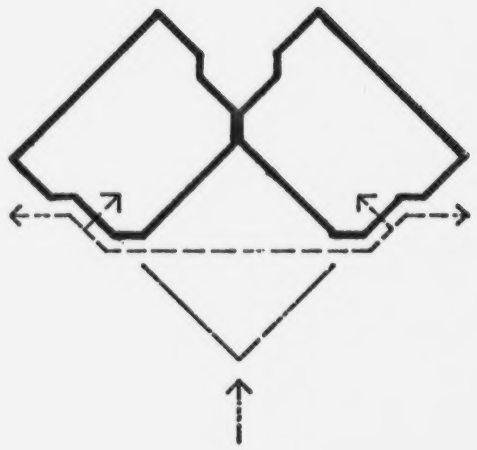
To generate maximum activity, the main inter-house movement would pass through this space.



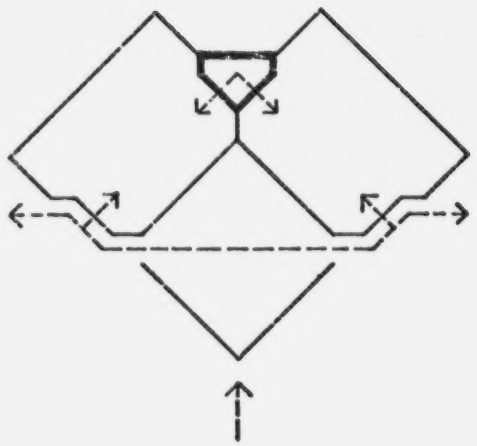
To give a sense of identity to the house unit, entry would be made directly into the main social area.



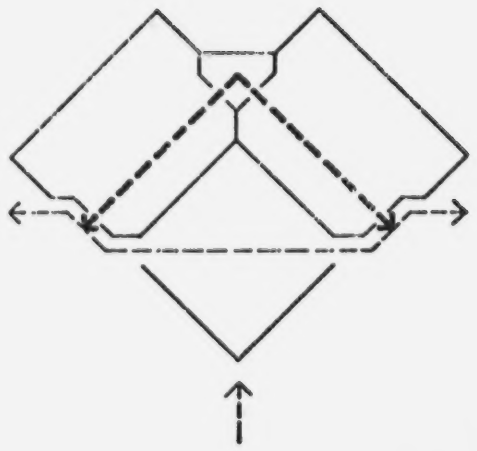
There are two bedroom units on each floor with direct access from the main inter-house movement.



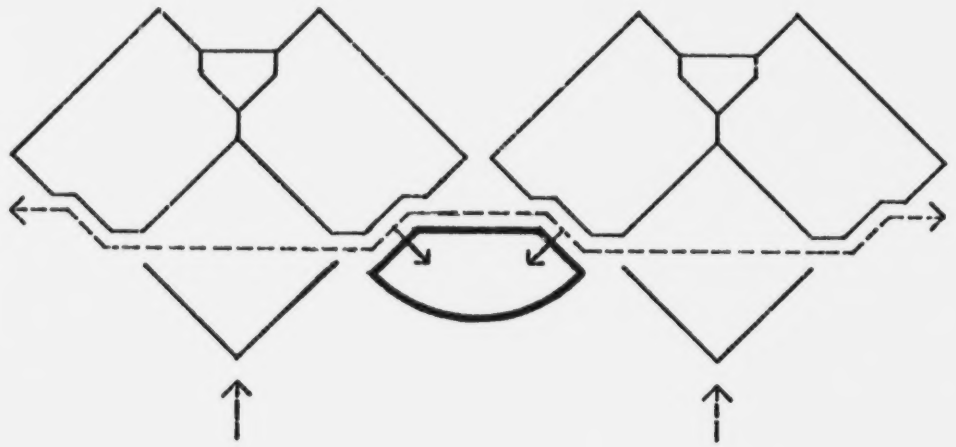
These are linked by the small intimate social space.



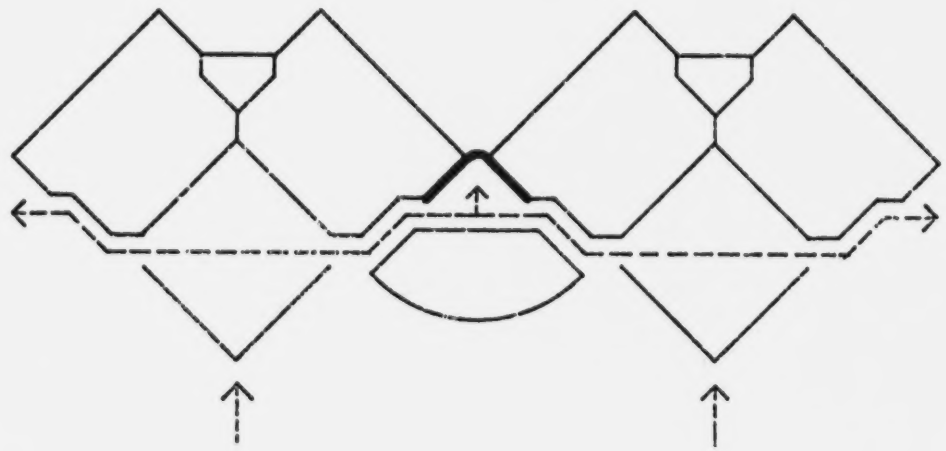
This layout creates a separate private movement system.



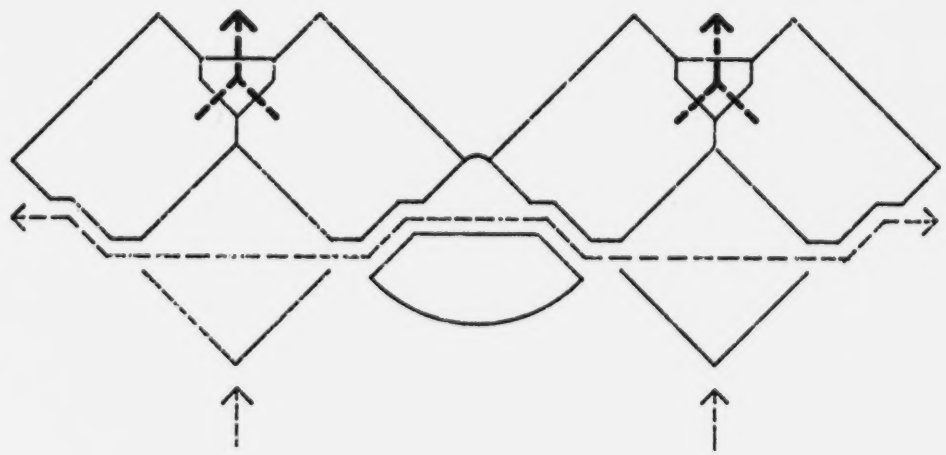
The counsellor's unit is formed by bringing two house units together, thus placing him in a position to control inter-house movement.



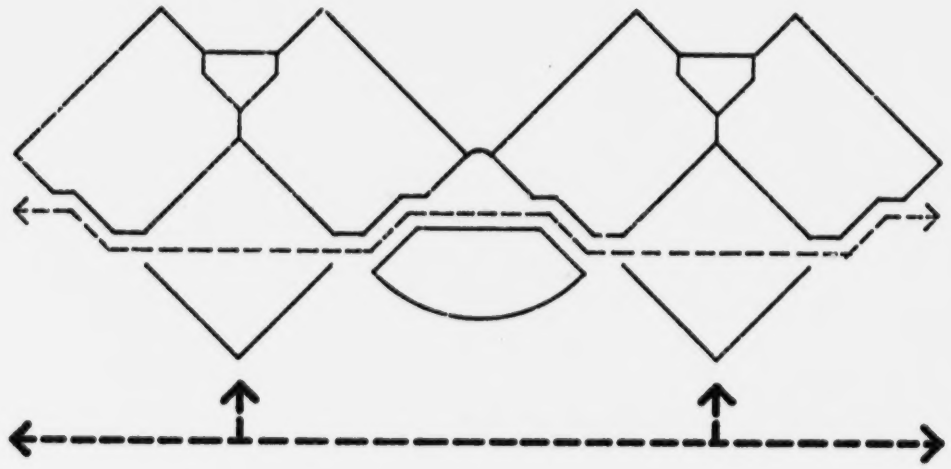
Off the inter-house movement, space is created for other activities such as TV room and utilities.



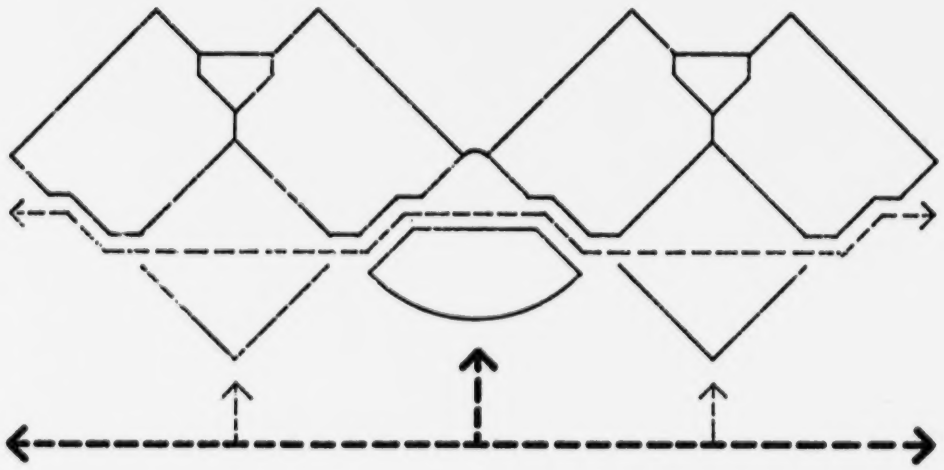
The bedroom units overlook a quiet, private garden which is reached from the small play area outside the intimate social space, at the lower level, and by a balcony and stairs from the upper level.



The house units are approached directly from the high movement zone between the school and the community.



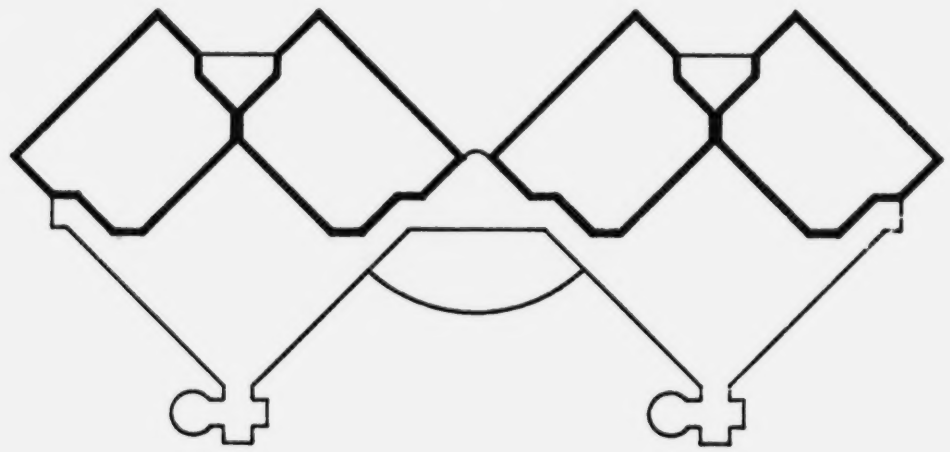
The counsellor has his own private approach and garden, isolated from the noisy activity of the house entrance.



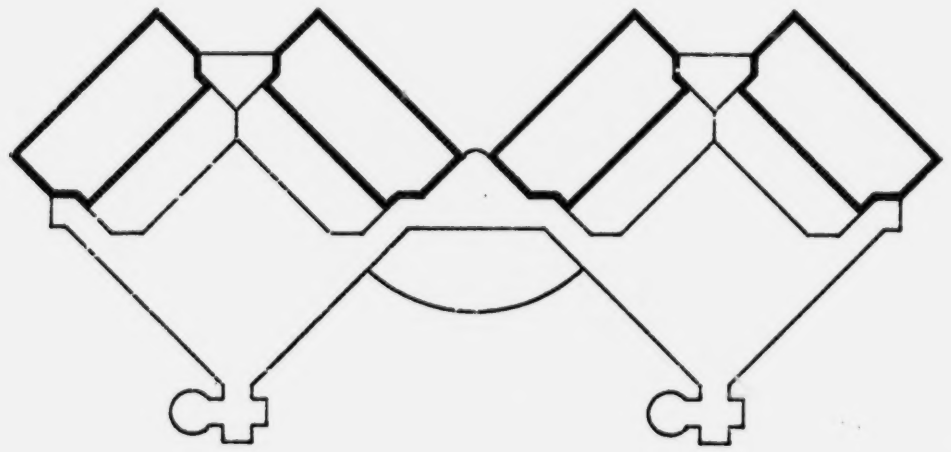
3:0 Detail Study of House Unit

Bedroom Unit
This is a large open area, fully glazed along one side to allow the maximum penetration of light and sunshine. Housed within the window wall are the air supply inputs, all of which are modularly designed to allow easy subdivision of the space by furniture and partitions.

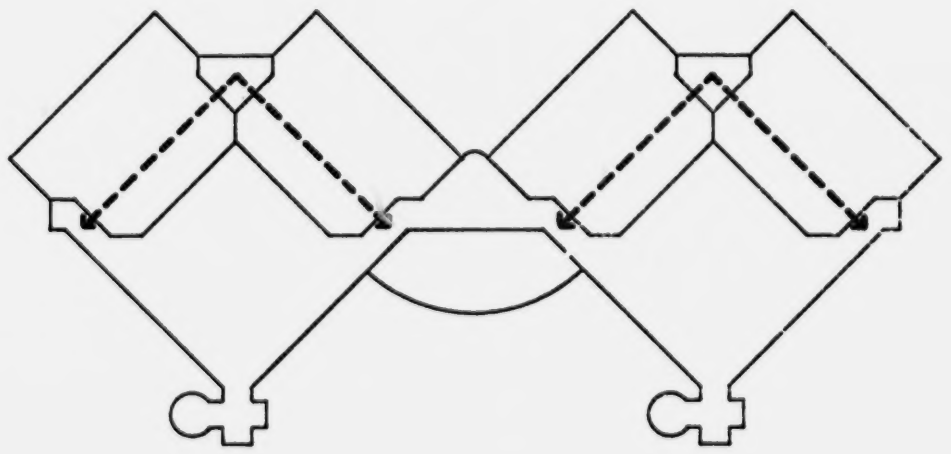
The bedroom unit consists of three main zones.



Personal Zone
This is the area where the group should be able to achieve maximum privacy, where they can store their personal belongings, where they can express themselves freely and which they should feel belongs to them as a retreat from the public areas of the house unit. Within the bedroom unit they would have the opportunity to create their own social grouping. The group may wish to have individual rooms, or develop an abstract open dormitory concept or any variation between these. It would be possible to increase the density at one end (by the use of bunk beds) and create a common space at the other. It is hoped that because of this flexibility, each unit will develop its own character. (see Section 4:0).

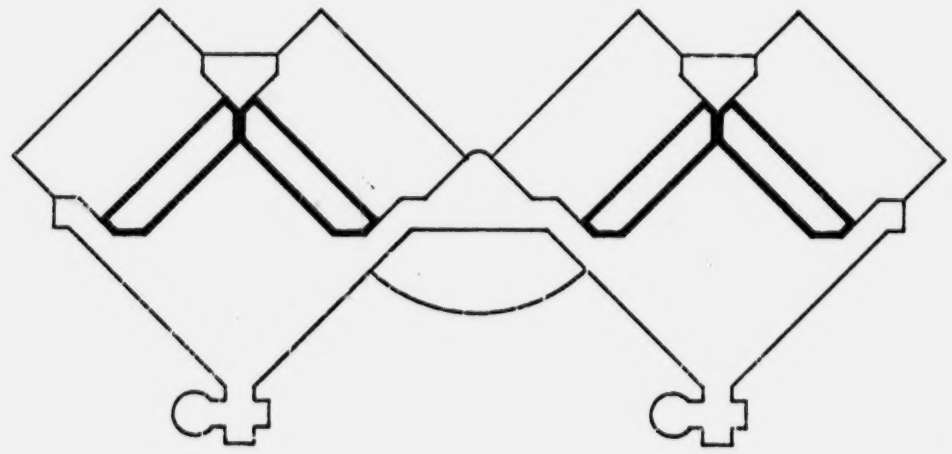


Movement Zone
By use of doors immediate access from this zone is possible to both the inter-house circulation, and to the intimate social area leading to the outside play space. These doors isolate the bedroom unit and act as acoustic and emotional barriers between the extremes of public and private.



Service Zone
It was considered that this should be as domestic in feeling as possible and should be accessible from the bedrooms without having to pass through public space. To allow for change in both the subdivision use of the personal zone and the age of the children, a range of mobile plastic service components has been considered which could be plugged into service outlets on the rear wall.

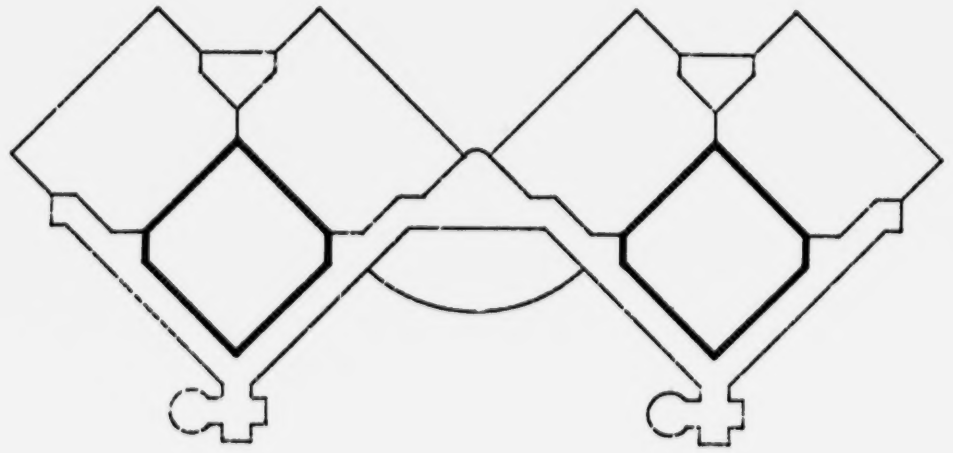
If necessary this zone could accommodate a kitchen unit which would make the bedroom unit a self-contained apartment.



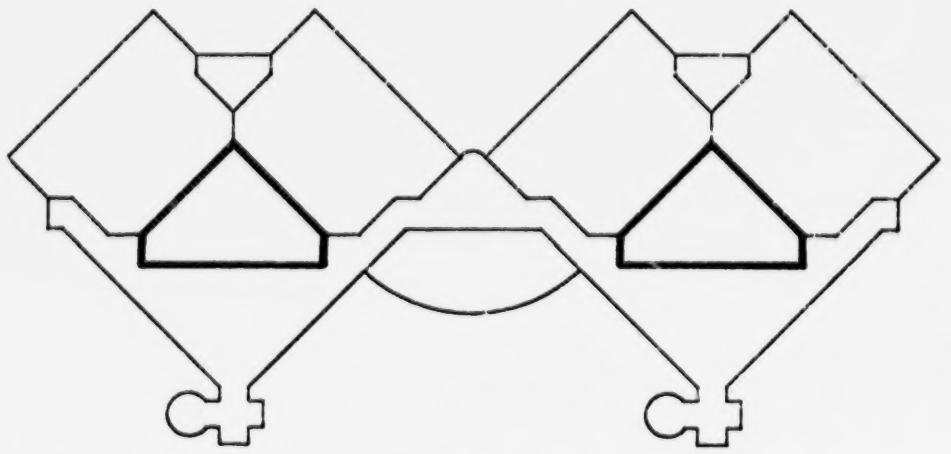
Hard Social Area
This is the main centre of activity within a house unit. From the entrance lobby you come immediately into the space, pause a few feet above it before descending the stair which wraps around the area giving it a domestic scale.

Under the balcony there would be a mobile kitchen unit for breakfast and evening snacks.

Otherwise, it is felt that each house should develop its own character for the area and a number of activities could be accommodated: table tennis, handicrafts, games.



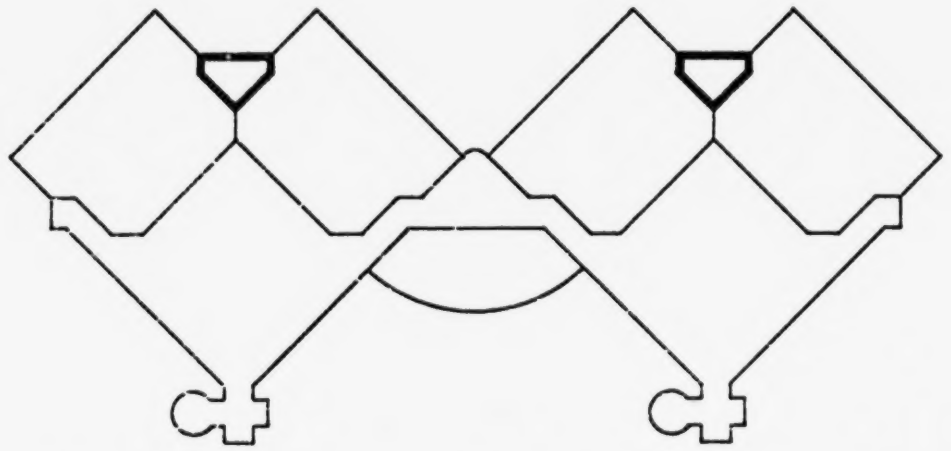
Soft Social Area
This is situated on the upper level overlooking the hard social area. It is just off the main circulation and casual relationships could be formed here. It will have a variety of seating and card games could be played. There will also be a supply of magazines, paperbacks and the sort of essential reference books to be found in a home (atlas, dictionary, etc.) incorporated in small mobile units, thus facilitating the interchange of reading matter between houses. Each house will be encouraged to subscribe to whichever magazines and newspapers appeal to them, thus again reinforcing the individual character of each unit.



Intimate Space

This is an extremely private space and can only be reached through the bedrooms; it also acts as a buffer zone between the bedroom units and the outside play space. Here the children can relax, in pyjamas if they wish, without fear of intrusion by outsiders.

A small pantry unit could be included for making coffee and hot drinks. In the summer the sliding glass doors give easy access to the outside space and the upper floor has a terrace with direct access to the ground. (see Section 4.0)

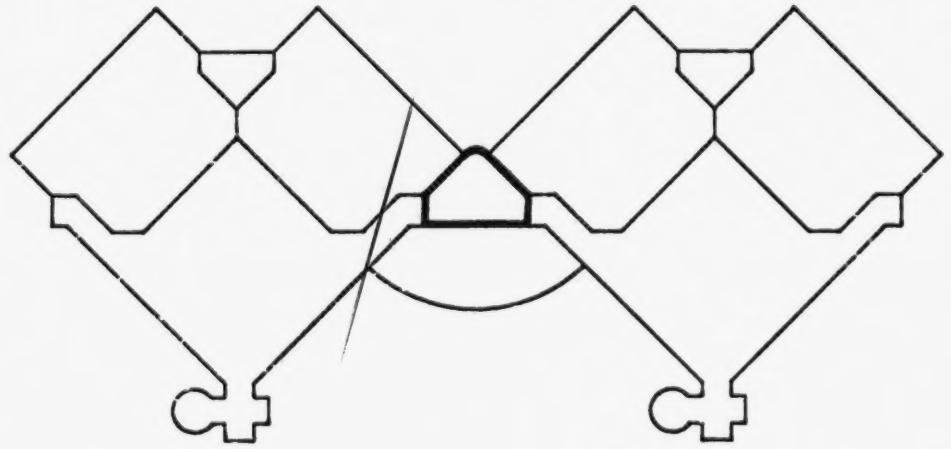


TV Room

This is located on the upper floor between house units, which enables the counsellor to have informal control should he wish to limit viewing. When a number of house units are linked the children can have access to a variety of different programs.

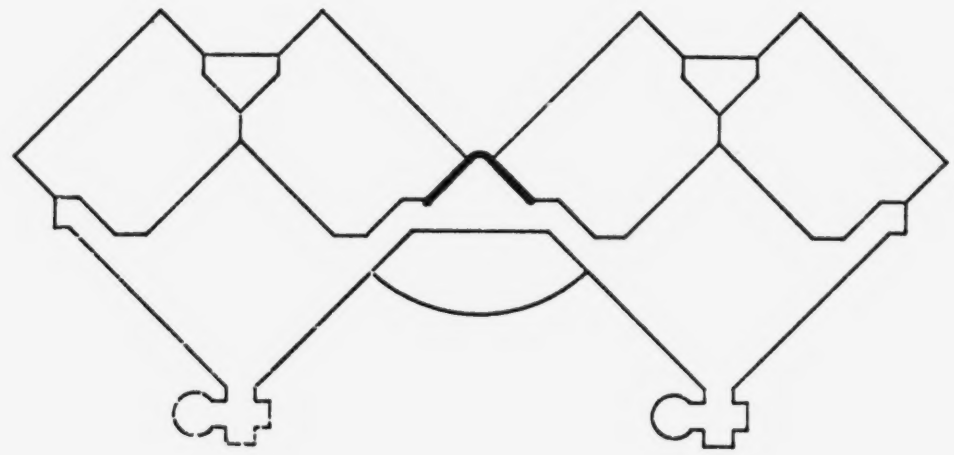
The room is acoustically isolated by entry through soundproof doors and for hearing impaired children a loop system can be incorporated. Children like to watch TV in a variety of lounging, sprawling, contorted positions and to allow this a relaxed atmosphere could be created with free form moulded shapes.

The use of educational TV, film strips and other media is being developed and it is possible that this room could be used as an instruction centre with the use of cable TV throughout the school.



Utility Area
It was felt that a space should be provided where messy activities could be carried out and therefore a utility area has been included which opens off the main inter-house circulation on the lower floor.

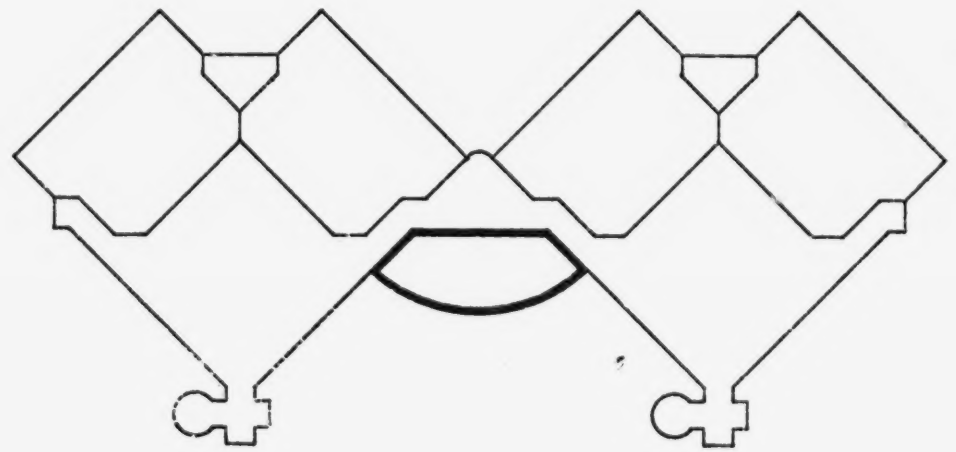
The surfaces in this area will be hard and durable and it could accommodate a variety of functions, e.g. shoe-cleaning, house laundry activities and storage of muddy football boots, skates, etc.



Counsellors
The counsellors' purpose is to look after the children's extra-school activities from the time they return in the evening to when they leave for school again in the morning. Therefore, overnight accommodation has to be provided for them.

Within the scheme, space for a one-bedroom apartment per house unit has been included to encourage the employment of a married couple who would give a more stable emotional balance for the children. It would however be possible to divide this space into two bachelor apartments. The counsellors' job is of supreme importance; it is their enthusiasm and imagination that will encourage the children to develop the full potential of the unit, making it a place to identify with and to take pride in.

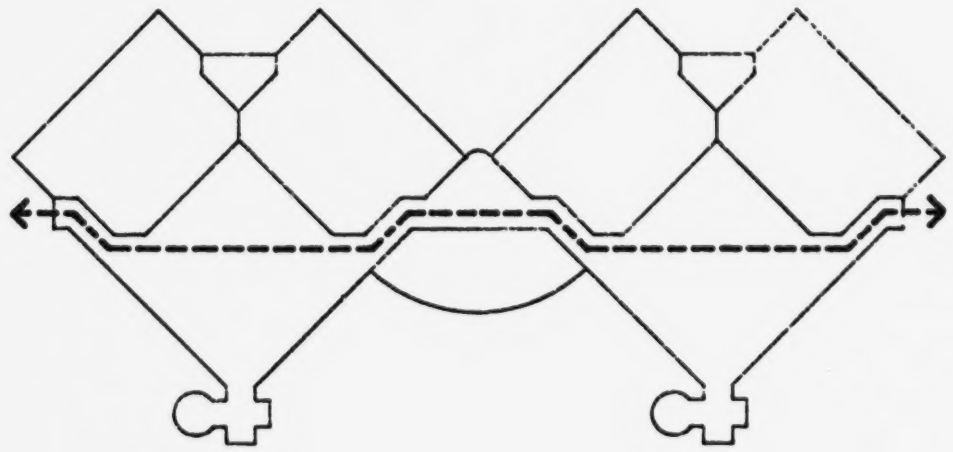
Their accommodation overlooks a quiet private area, away from the general movement of the children, which the counsellors can treat as their own garden. They enter their apartment through this area directly from the main circulation of the campus without having to pass through the main house unit. The positioning of the unit within the scheme is such that the counsellors have direct access on both floors to the children under their care, and also gives them control over inter-house movement.



Inter-house Movement

The major inter-house movement will pass through the lower floor of the building, connecting the main social areas. By incorporating this movement with other areas, the enclosed corridor space has been kept to a minimum and the opportunity for exchange of ideas and social contact between house units has been greatly increased.

To allow free use of the system by handicapped children, and also the easy handling of heavy equipment, elevators should be incorporated at intervals within the housing complex. It is estimated that one elevator per 180 students would be justifiable.



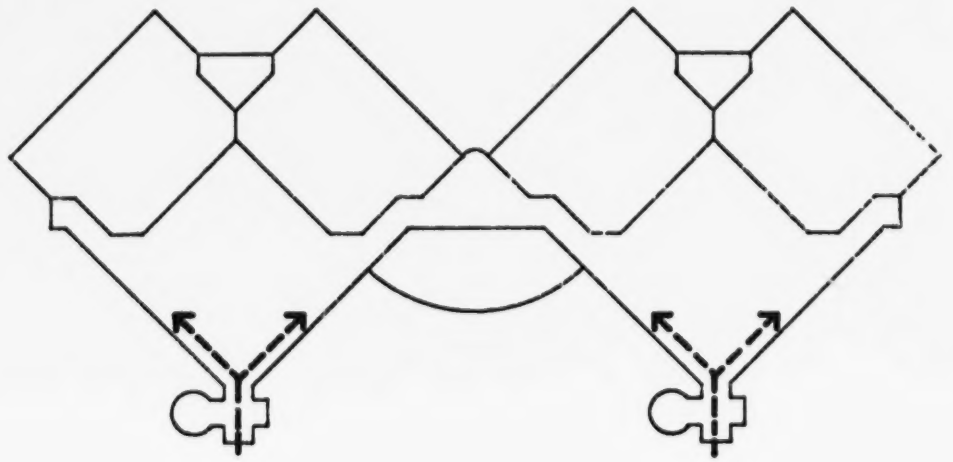
Entrance

The entrance to each house unit is centrally located and is approached from the campus side of the building. This location destroys any ambiguity between units and helps to increase a feeling of identity. Involvement and integration with the house group is achieved by entering immediately, a few feet above the main social space, before moving up or down to the more intimate areas.

The entrance acts both as a draught lobby and as a transition between the outside and the inside. Within it, provision has been made to one side of the main circulation for the storage of overcoats and wet, muddy shoes. Depending on age, between 16 to 32 hanging spaces can be provided by the use of moveable panels.

On the opposite side of the entrance the children can collect their mail, which is one of the first things they look for on returning from school.

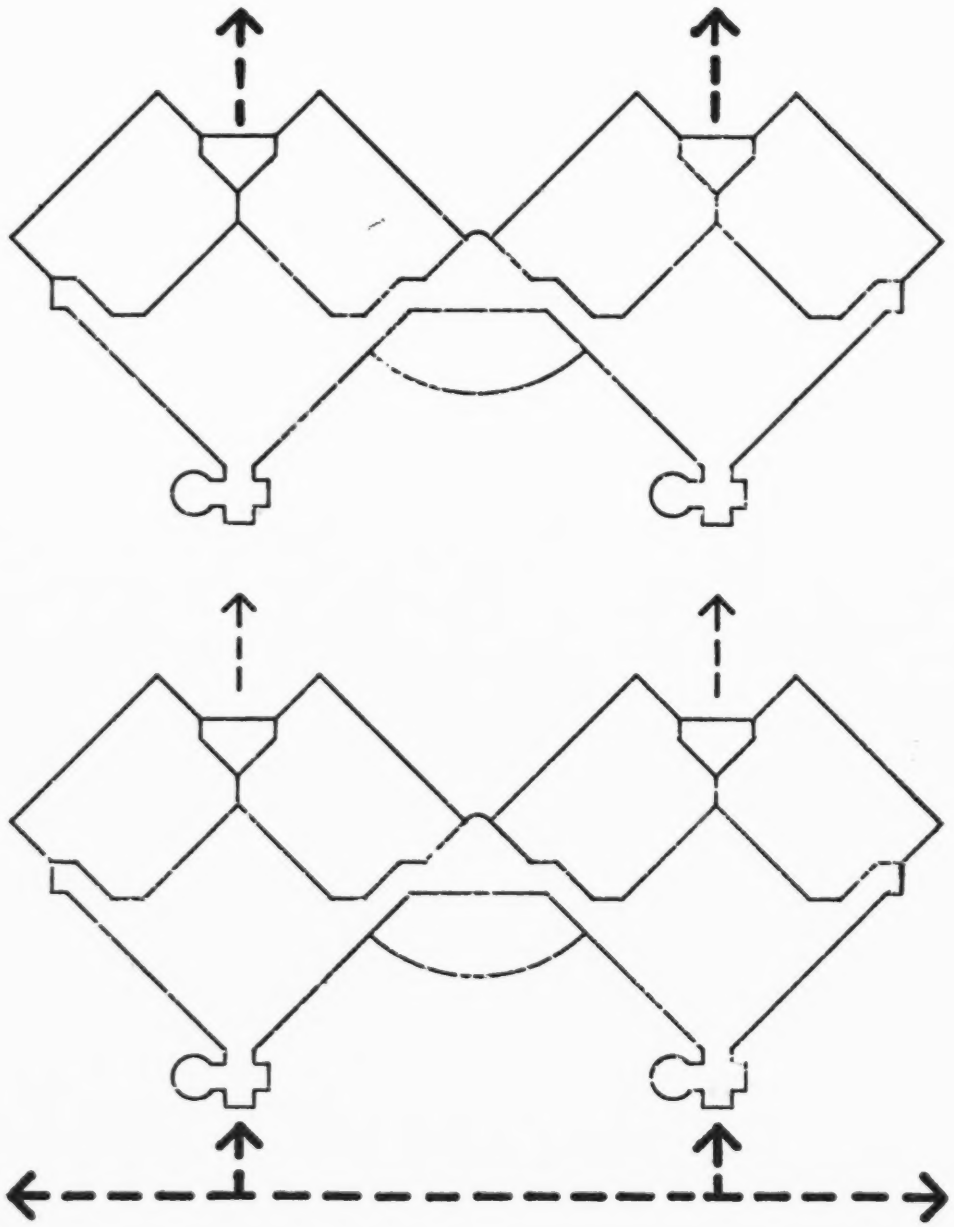
The whole floor area will be covered with rubber matting to prevent dirt being carried into the main unit.



External Areas
It was decided that there should be a hierachy of outside areas, each with its own character and ranging from the private to the public, from undisturbed natural growth areas to formalized asphalt play areas.

Passive Activity Areas
Outside the intimate social area would be a transitory space, where the smaller children could play with their toys, and the older ones sit, study, sunbathe. It was felt that the bedrooms should overlook a quiet area and this would be soft and grassy, with an emphasis on natural growth, trees, flowers, shrubs, and could develop into a rough wilderness where they could study nature and play hide and seek.

High Movement Areas
The high movement zone leading from the house units to the school or the community will need durable surface community will need durable surfaces and should have a slightly urban character. The surfaces need not be a monotonous tarmac but should be varied with paving, tiles and planting.



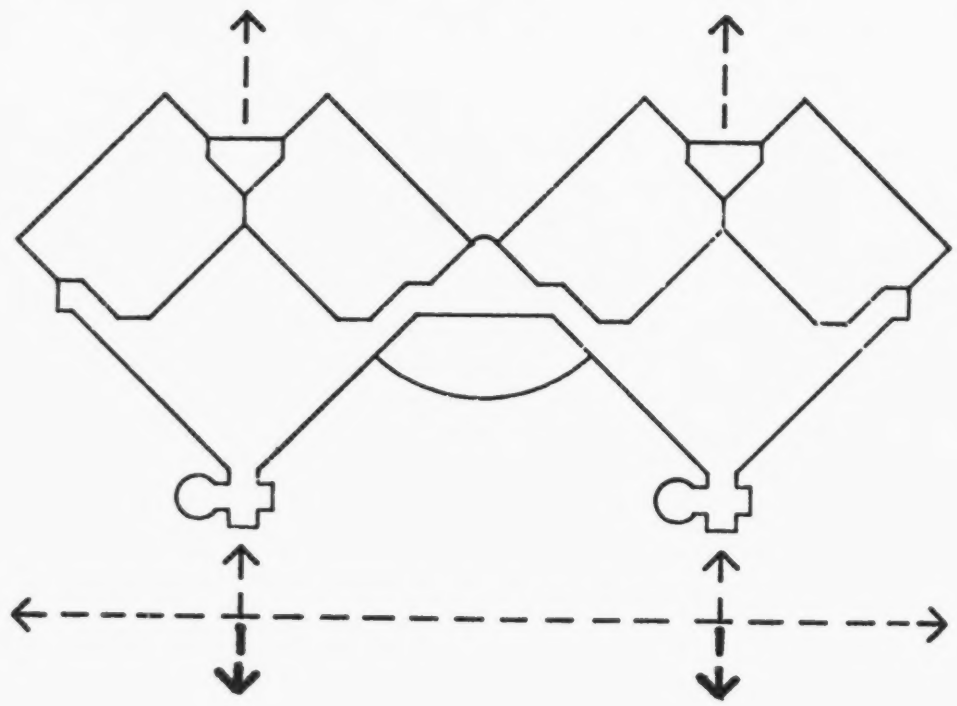
High Activity Play Areas

The high activity play spaces would be near the entrances to the house units on the other side of the high movement zone. These would be more formalized than the passive activity areas and would be common to all the house units. They could accommodate a number of different activities, two important examples being an adventure and a construction playground.

The adventure playground would contain the usual swings, slides, seesaws, but they would become part of a sequence of play events and play areas, which would be landscaped to include a variety of paths, tunnels and climbs and would be surfaced with diverse materials ranging from hard concrete to sand and grass, each placed to react to the use it goes under. The playground and the elements within it should provide a positive experience for the children and should encourage social interaction.

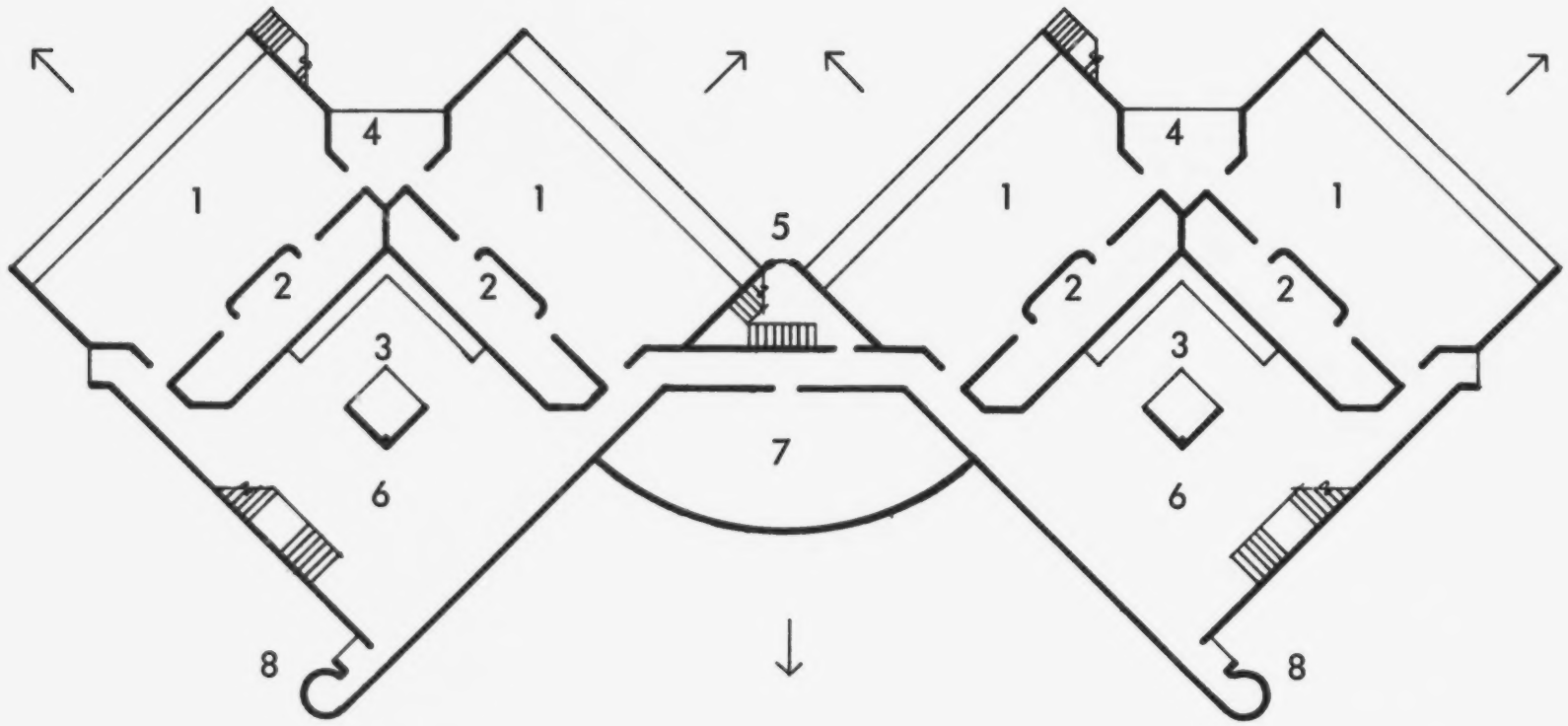
A construction playground would be equipped with a large number of basic building materials such as pipes, bricks, concrete blocks and scrap lumber. The area should be uneven and contain gravel, rocks, water and mud. Simple tools would be available, hammers, saws, nails, wheelbarrows and shovels. This playground would encourage the initiative, skill, and cooperation of the children and they should be allowed to construct their own ideas rather than being given a specific task.

It is hoped that these facilities would be shared equally by the school and the outside community, thus forming an important meeting ground and a link between the two societies.



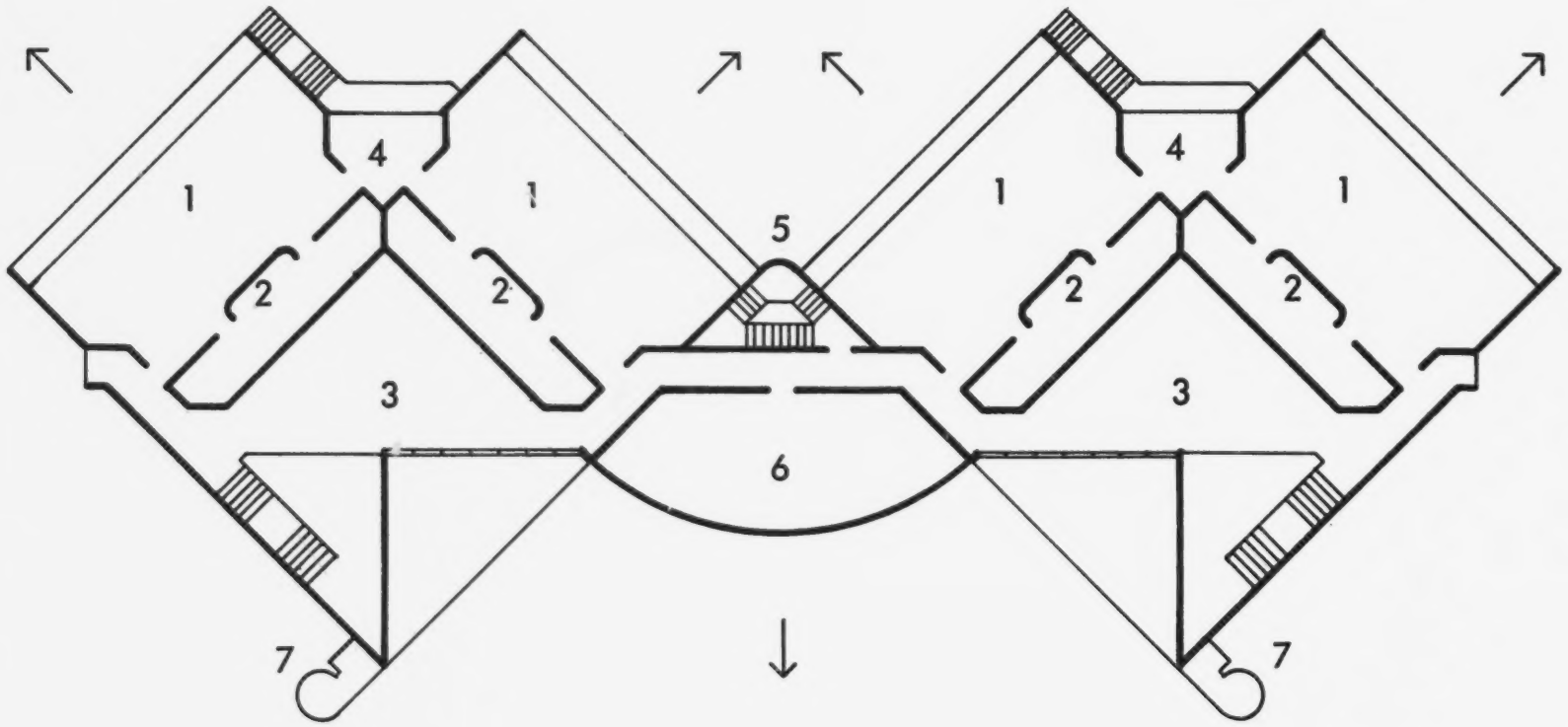
4:0 Detail Drawings of House Unit

Lower Floor Plan

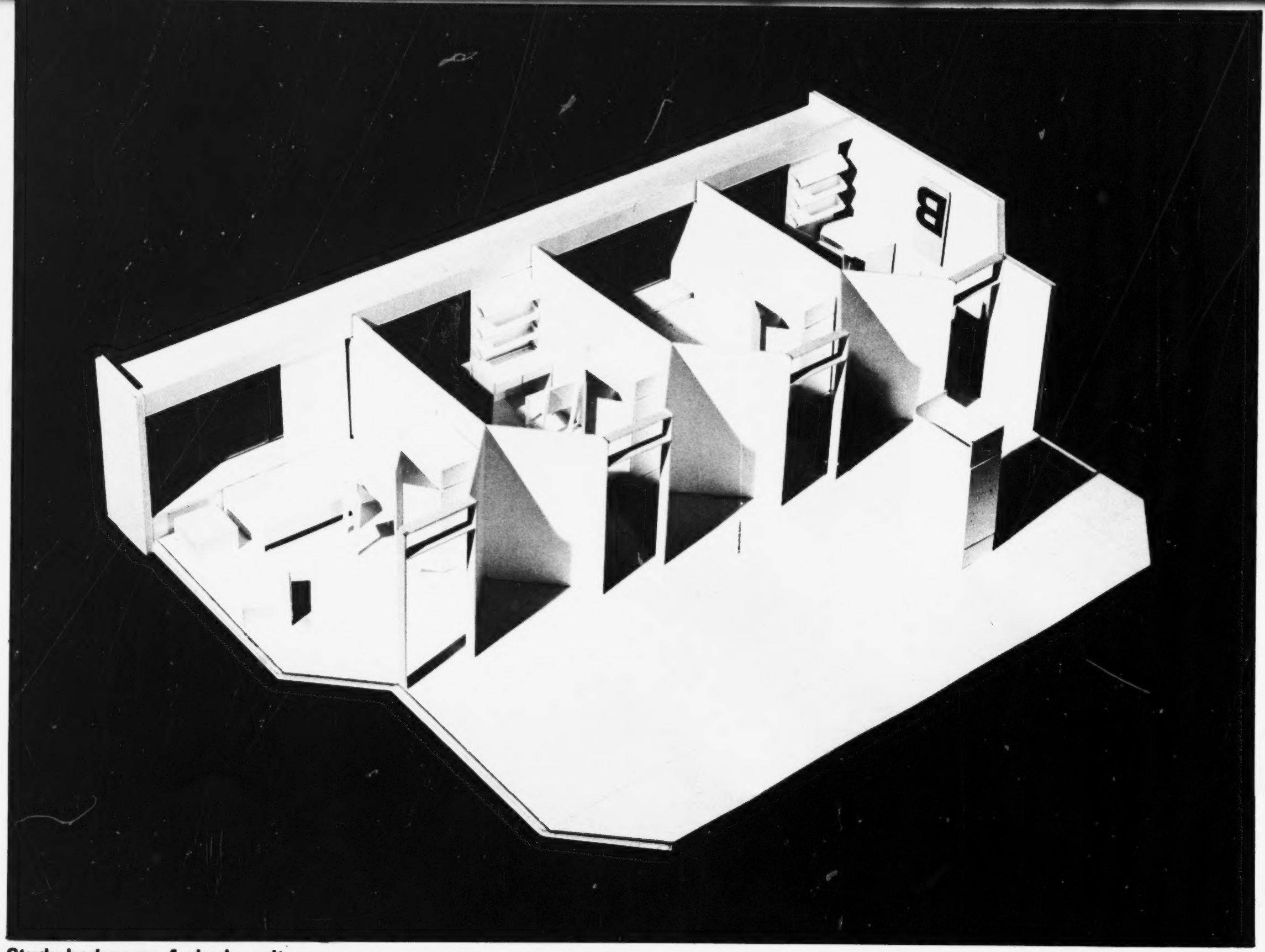


1 Quiet sleep, study unit (4-6 or 8 children)
2 Domestic washroom storage & main mechanical duct area
3 Small kitchen & snack area
4 Small private social area, common to both living units
5 Escape stair, common to both house units
6 Main house living & social area
7 Ground floor of counsellor's unit
8 House entrance & cloaks

Upper Floor Plan



1 Quiet, sleep study unit (4-6 or 8 children)
2 Domestic washroom, storage & main mechanical duct area
3 Semi-mezzanine, intermediate social area
4 Small private social area, common to both living units
5 Escape stair, common to both house units
6 Upper floor of counsellor's unit
7 House entrance & cloaks



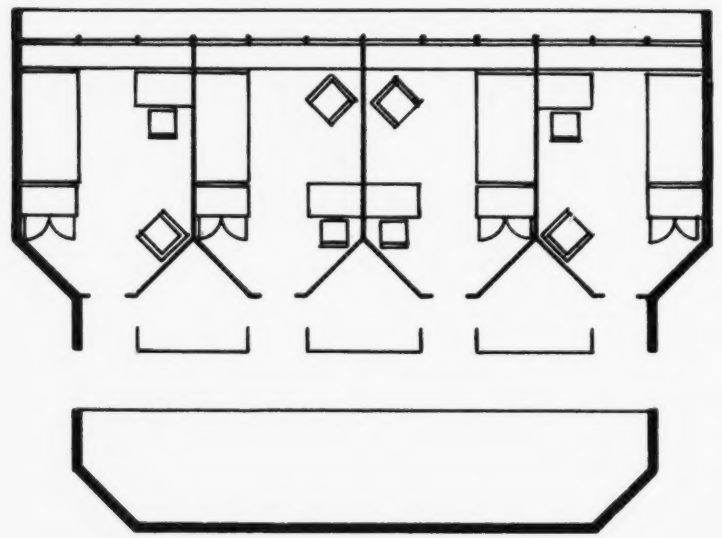
**Study bedrooms 4 single units —
Senior**

Senior Room Layouts

It is expected that the older students will want the maximum privacy, both visual and acoustic, creating a small space where they have complete freedom to study, entertain or sit in peace. For this reason full height partitions will be used and within the rooms created it will be possible to arrange the furniture to suit individual quirks and fancies.

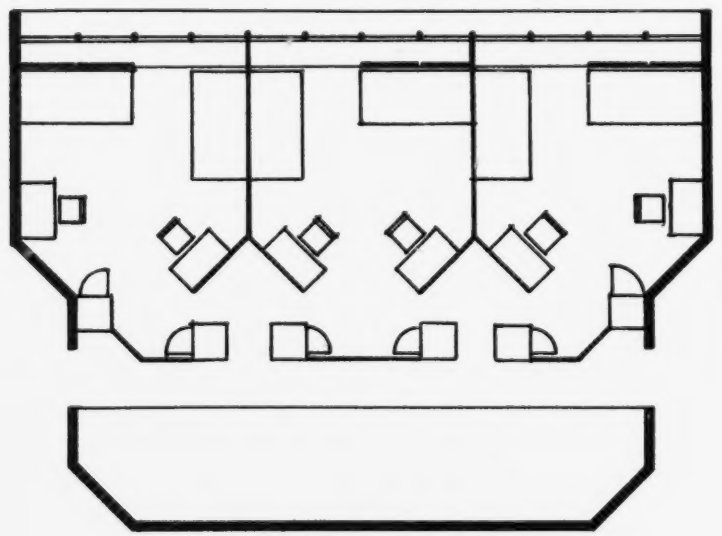
4/1 person rooms

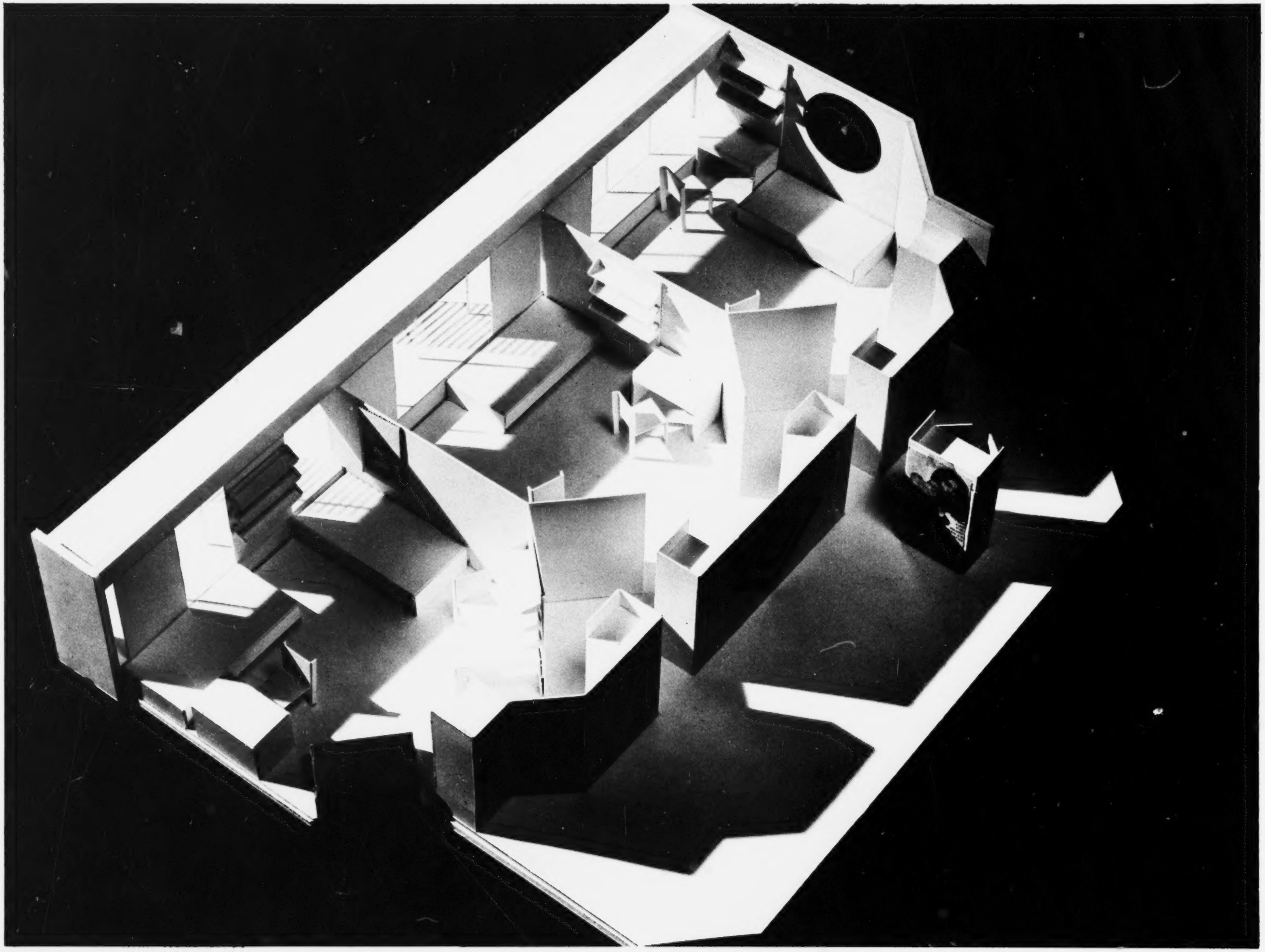
Photograph of model on previous page.



3/2 person rooms

Photograph of model on following page.



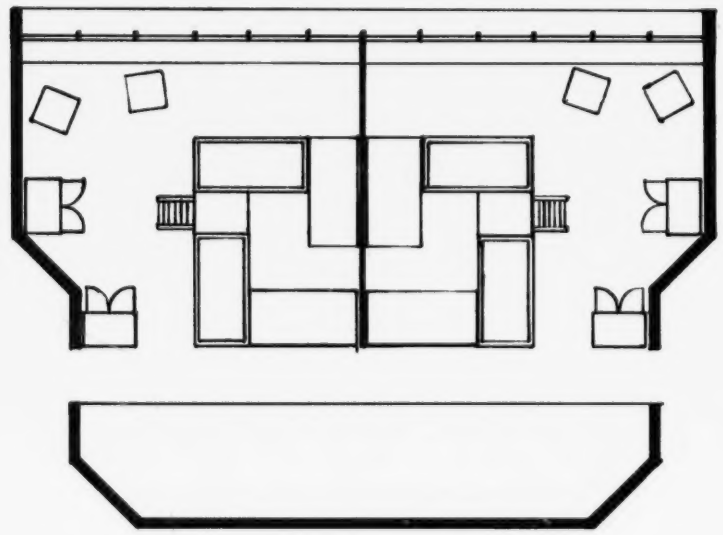


**Study bedrooms 3 double units —
Intermediate**

Junior Room Layouts

For the younger children it was felt that there should be little distinction between sleeping and playing, and that they should be able to play quietly in their bedroom away from the main areas of the house unit. The furniture and partitions could divide the space but they would be easily moveable and could be pushed to one side so the children can form a large play area. The use of bunk beds permit a high density of space use and at the same time provides a larger free area.

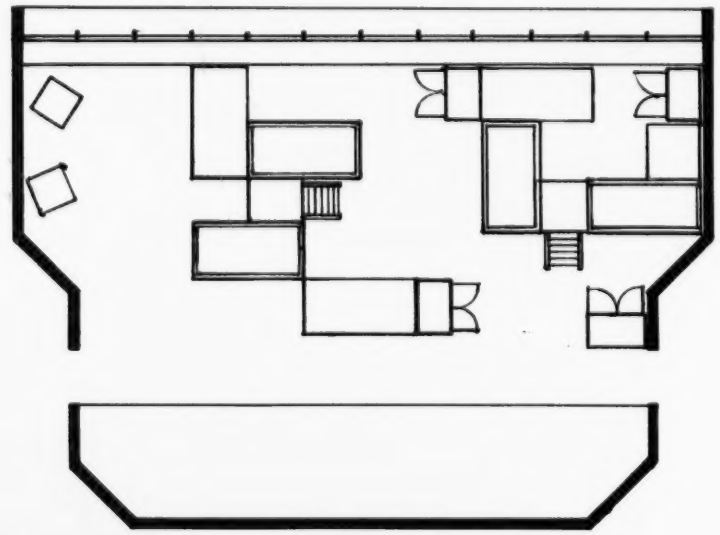
A full height partition could be used to divide the unit into two smaller areas.

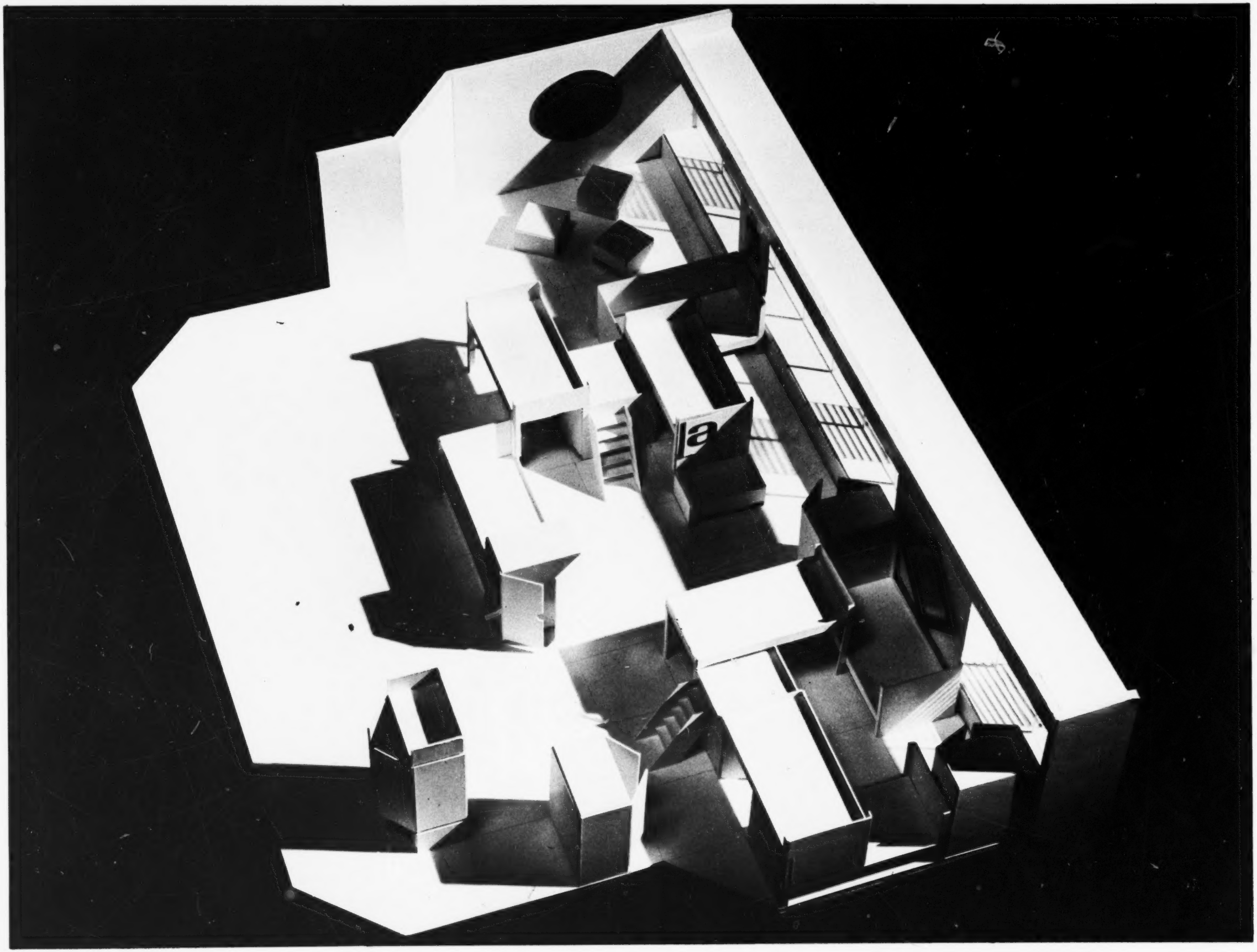


2/4 person rooms

1/8 person room

Photograph of model on following page.





8 Junior sleep-play units

5.0 Furniture Components

Furniture Components

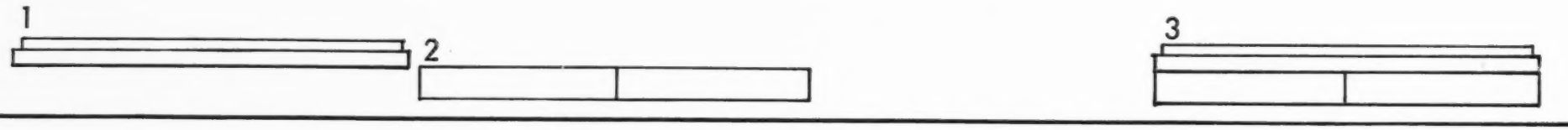
A range of furniture and partitions has been designed which will allow the large open space of the bedroom unit to be subdivided into smaller areas.

Each child should be allowed the maximum of freedom of expression and made to feel that his bedroom is his own personal territory. To encourage this he will be allowed to use his own items of furniture and equipment. However, the standard range will be readily available and should be colourful, playful and robust as well as adaptable to the individual's needs. The same basic range will be used for all age groups and will therefore have extreme flexibility and interchangeability.

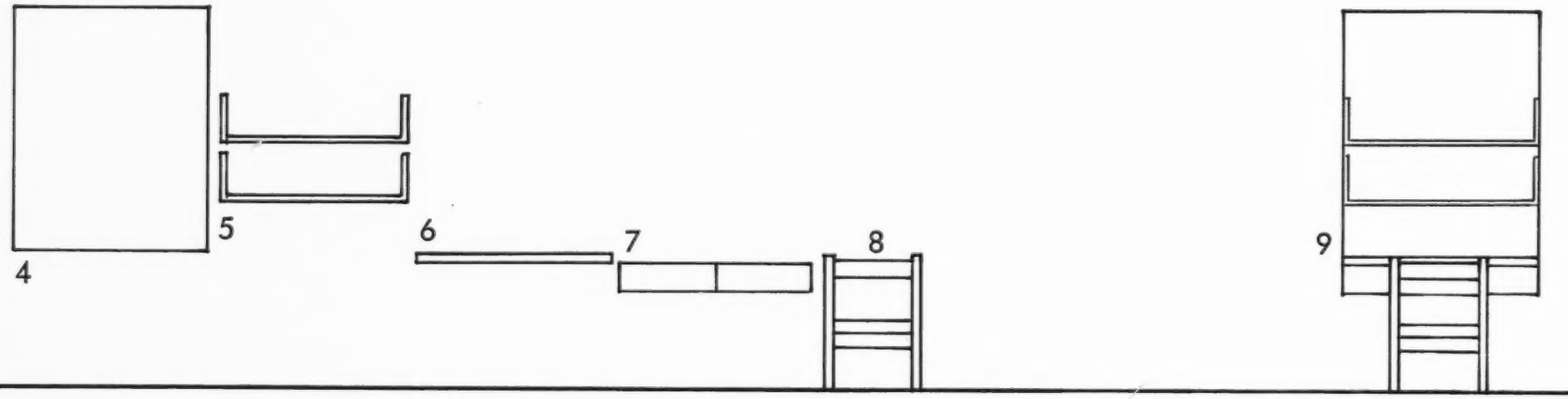
Since hearing handicapped children under the age of 8 can suffer from a loss of balance, the use of bunk beds would not be recommended for this age group.

Senior Furniture Components

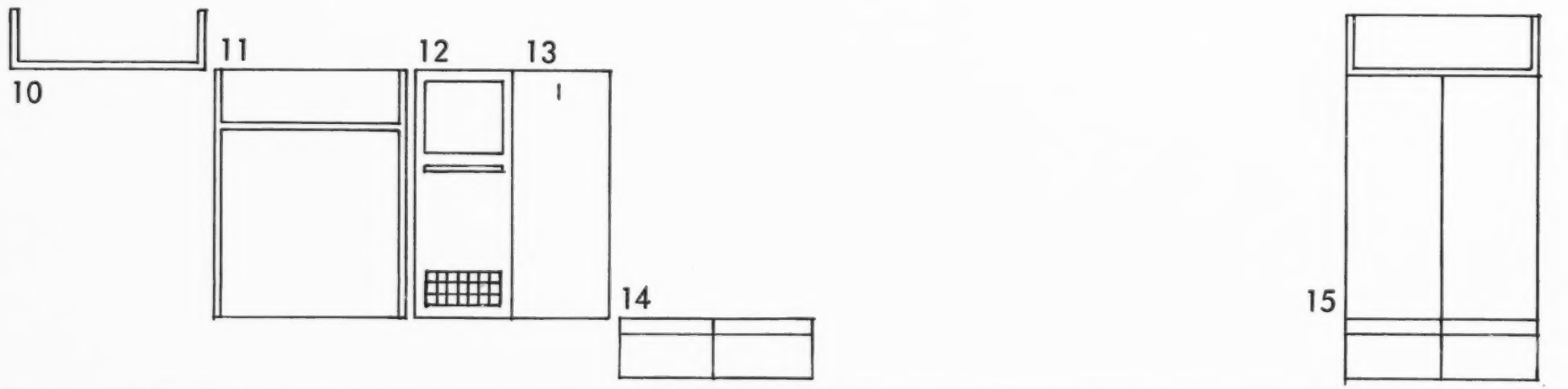
1 Mattress
2 Drawers
3 Combined mattress & drawers
4 Pin-up board
5 Shelves
6 Desk top
7 Desk drawers
8 Chair
9 Combined unit
10 Wardrobe open storage
11 Wardrobe
12 Mirror, shelf, linen storage
13 Coat hook
14 Drawer storage
15 Combined unit



Sleep



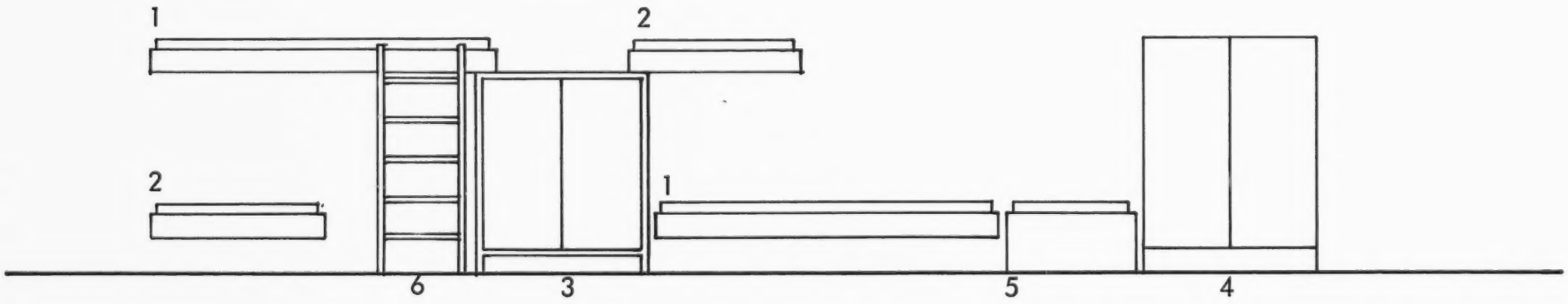
Study



Storage

Junior Furniture Components

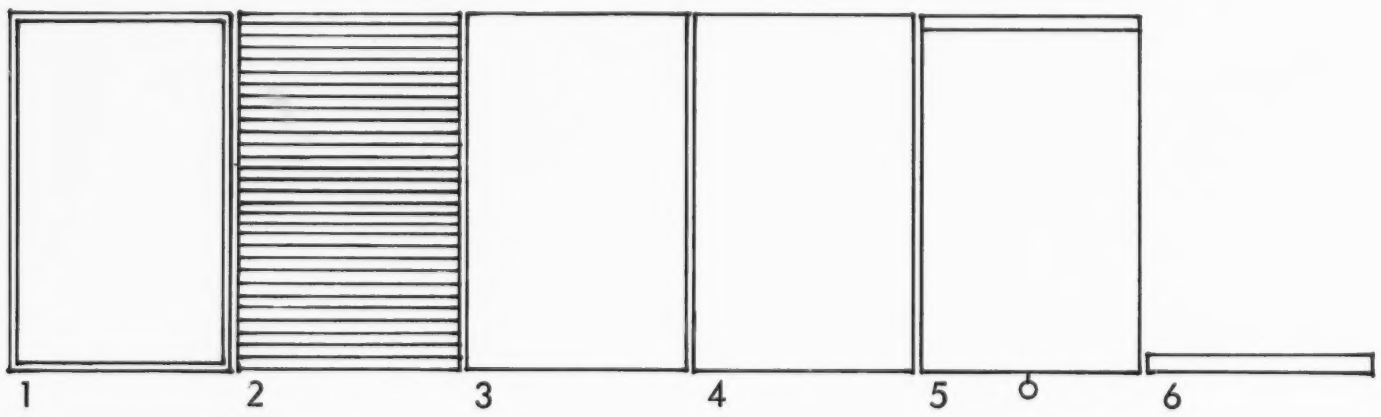
1 Upper bunk (side view)
2 Lower bunk (end view)
3 Storage unit Type A
4 Storage unit Type B
5 Combined seat storage unit
6 Ladder serving two upper bunks



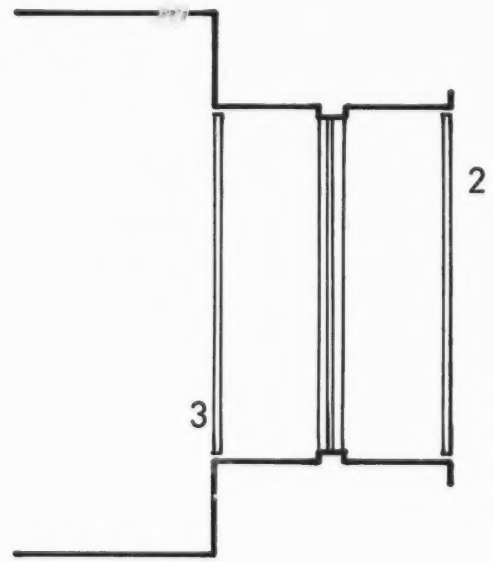
Window-wall Components

This basic curtain wall can be modulated in depth by the use of various panels both internally and externally.

1 Exterior solid panel
2 Exterior louvred panel
3 Interior solid panel
4 Interior cork pin-up panel
5 Interior blind
6 Seat cushion



Elevation



Section

6.0 Linear Development of Housing Units

Linear Development of Housing Units

The development and design process followed in this study, led initially to a linear concept.

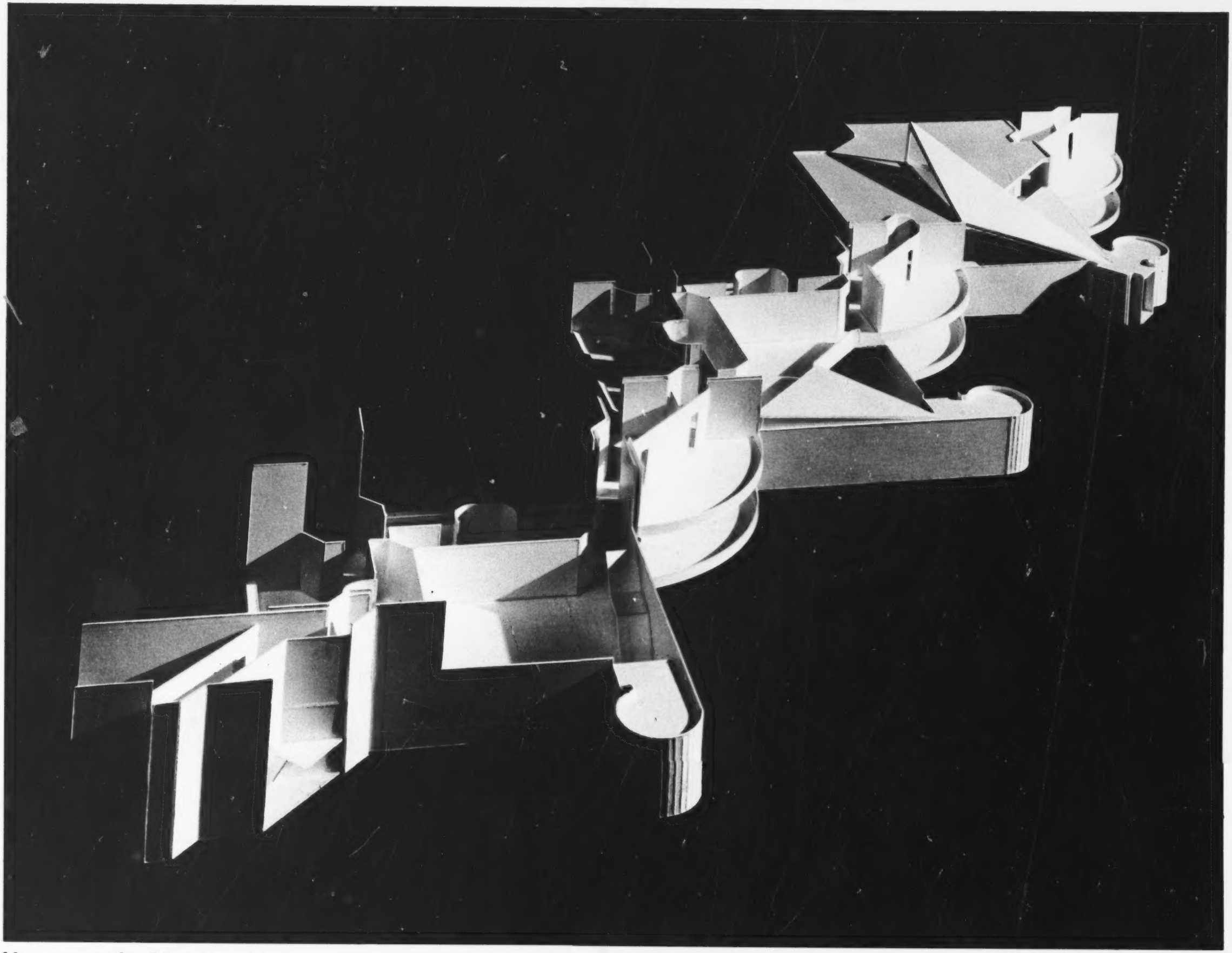
The application of this system to actual site conditions at Belleville School for the Deaf, necessitated the development of the angular system.

The advantages of the linear system appear to be:

1 Where site conditions dictate a linear solution.
2 Simplified cost-estimating, public utilities pedestrian and vehicular access.
3 Straightforward movement systems which would be beneficial to the physically handicapped, or the visually impaired.

The disadvantages of the linear system appear to be:

1 An external and internal repetition of space and form.
2 Loss of house unit individual identification.
3 Intersecting and repetitive lines of view from within the study sleep areas.
4 Reduced opportunity to vary the form and environment of the counsellors' units.



Linear growth of house units

7.0 Angular Development of Housing Units

Angular Development of Housing Units

Through the interest and cooperation of the senior administrators for Special Schools, the opportunity arose to apply this housing study to the Belleville School for the Deaf.

The two major developments that materialized from this applied study were:

a The development of the angular system necessitated by site conditions i.e. the need to preserve as many of the fine existing trees as possible.

b The opportunity to soften and de-institutionalize the main formal approach to the school, by locating the angular housing arrangement along the open south end of the main approach quadrangle.

This proposal had the added advantages of locating the housing close to the street as in private housing and permitting 75% of the house units to enjoy the view of the Bay of Quinte.

The advantages of the angular system appear to be:

1 The external appearance is no longer regimental.

2 The reversal of one unit in every four units has increased the individual character of the units and varied the lines of view from within.

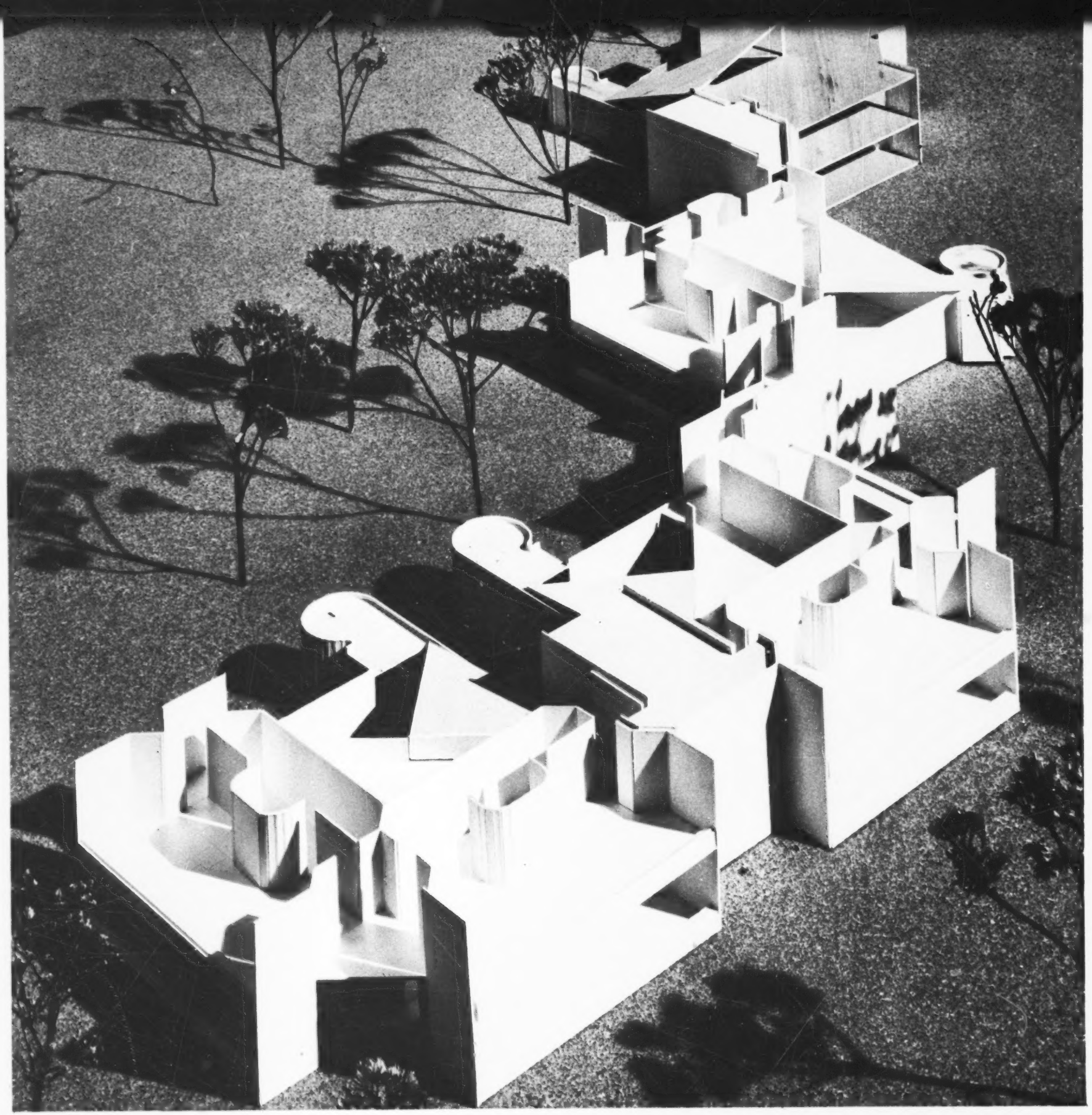
3 All lines of view from the sleep study areas are uninterrupted and intersect in only one case.

4 The general massing and appearance has greater interest and is no longer readily discernable as a repeat system.

The disadvantages of the angular system appear to be:

1 In the case of physically handicapped or visually impaired children the more complicated movement system could prove to be undesirable.

Angular growth of house units



Angular
&
Linear Growth
of Housing
Units